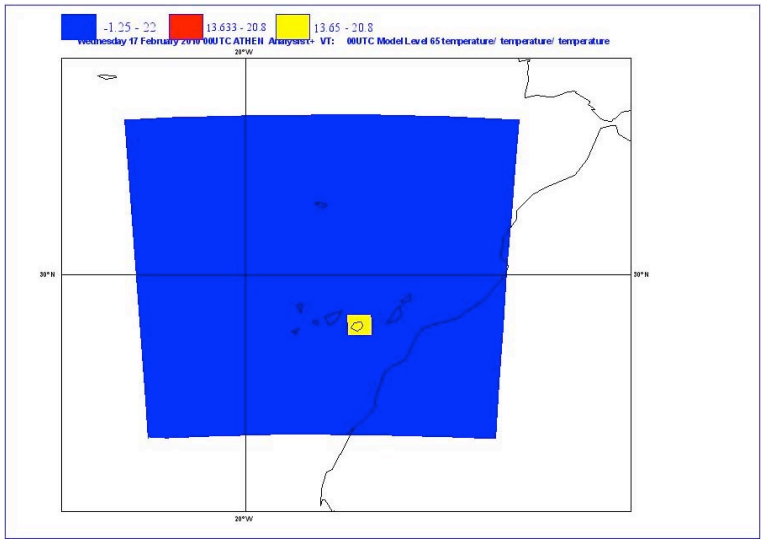
The AROME model performance at high resolution

- Outline
  - Experiment design
  - Show results
  - Verification: Model vs. Observation
  - On going work

Experiment design

- Study area: Gran Canarias (Lat~28º, Lon~-15º)
- Date: 2010/02/17
- Physics VS non physics experiments
- Orographic file: GTOPO30 ~ 1km



Experiment design

Cycle:36h1 Version:04	Main feactures of setting model				
	Name EXP.	Resolution (km)	Host model (boundary interval)	Numerical time step (s)	NLON/NLAT
Physic	aic_25_36h14	2.5	Ifs (3h)	60	576/576
	aic_10_36h14	1	Arome (1h)[2]	30	100/100
	aic_05_36h14	0.5	Arome (1h)[2]	10[3]	200/200
No-physic[1]	aic_25_36h14nphy	25	Ifs (3h)	60	576/576
	aic_10_36h14nphy	1	Arome (1h)[2]	30	100/100
	aic_05_36h14nphy	0.5	Arome (1h)[2]	10[3]	200/200

(1) Override the physics and diagnistics (flow and accumulation)
(2) Nesting used: experiment aic_25_36h14 and in the case no-physic experiment aic_25_36h14nphy
(3) Stability ploblems for step=15s; Semi-lagrange trajectory out of the atmosphere

Results

WITH PHYSICS

Model level = 65

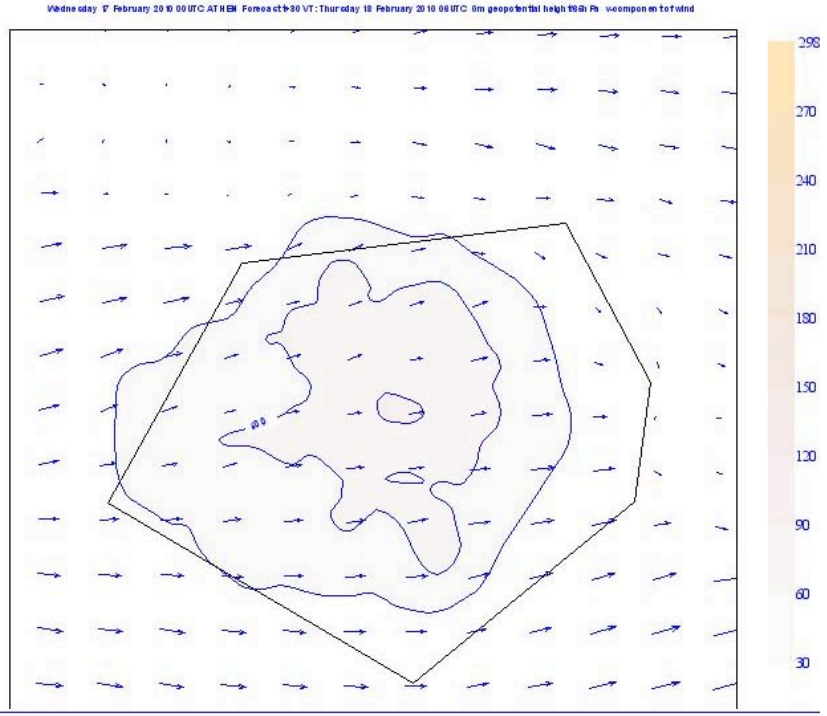
Param = wind

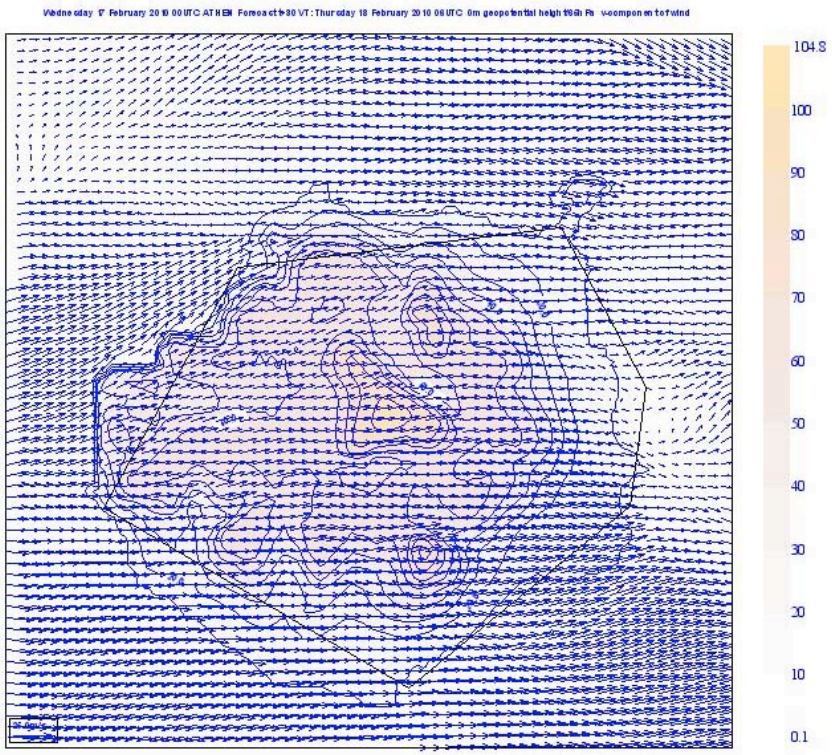
Forecast = t+30 h

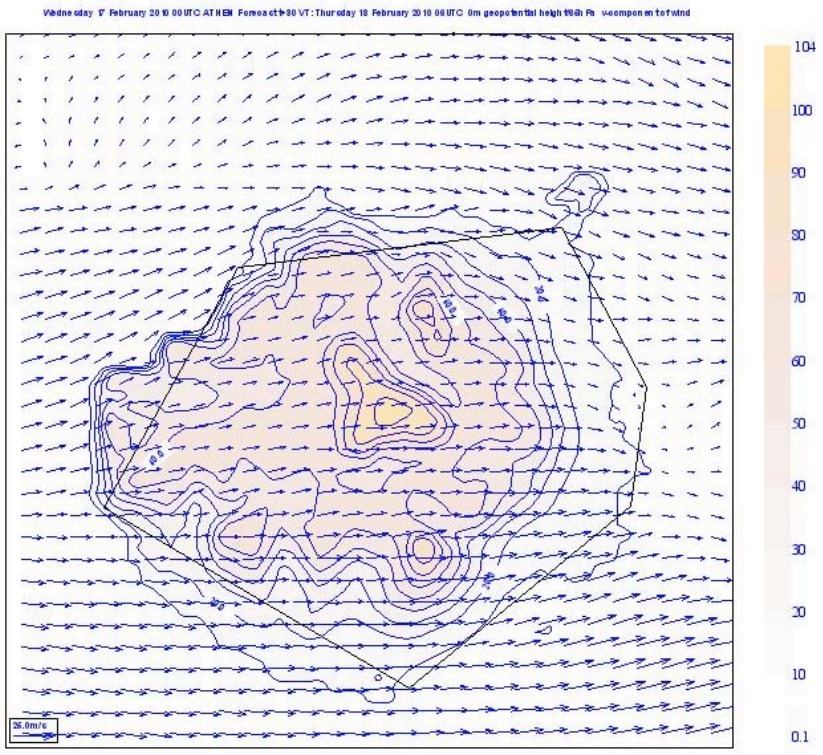
2.5 km

1 km

0.5 km







Results

NON PHYSICS

Model level = 65

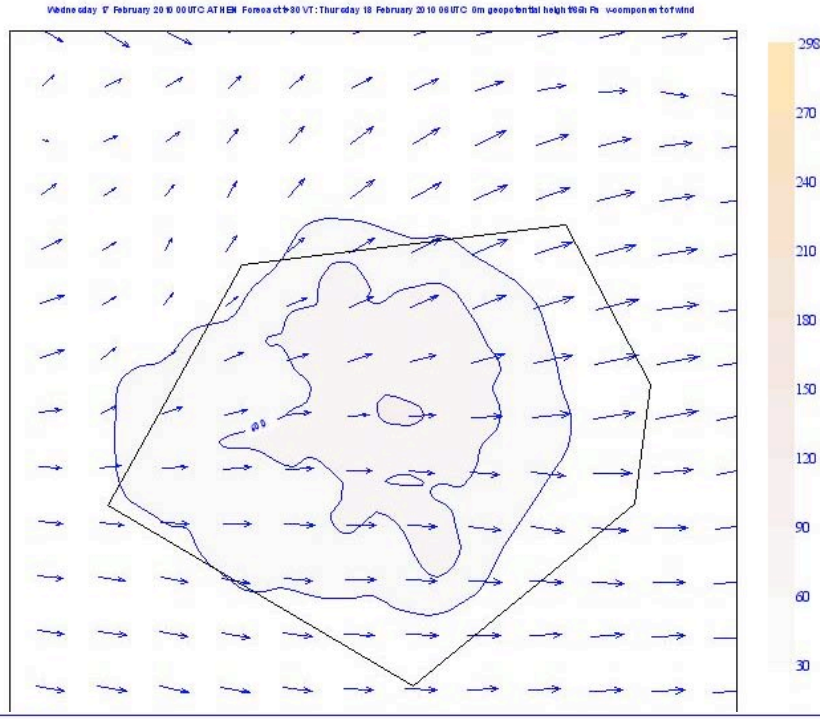
Param = wind

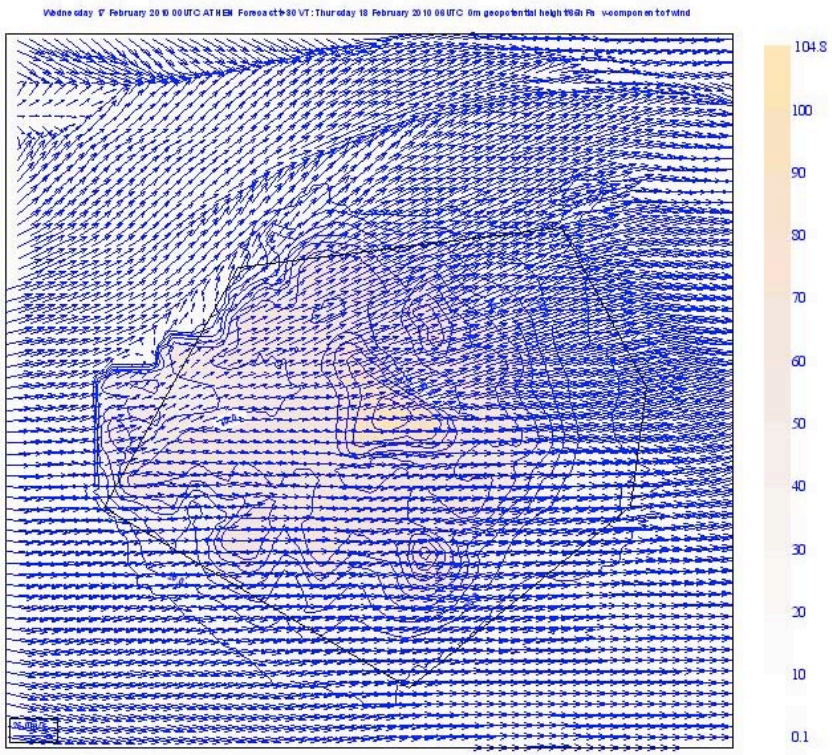
Forecast = t+30 h

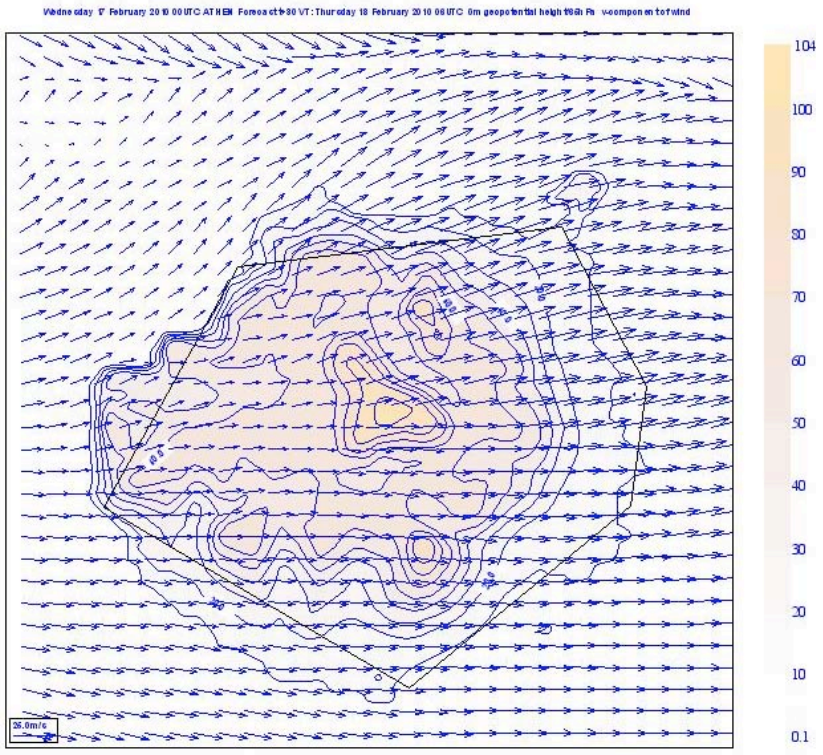
2.5 km

1 km

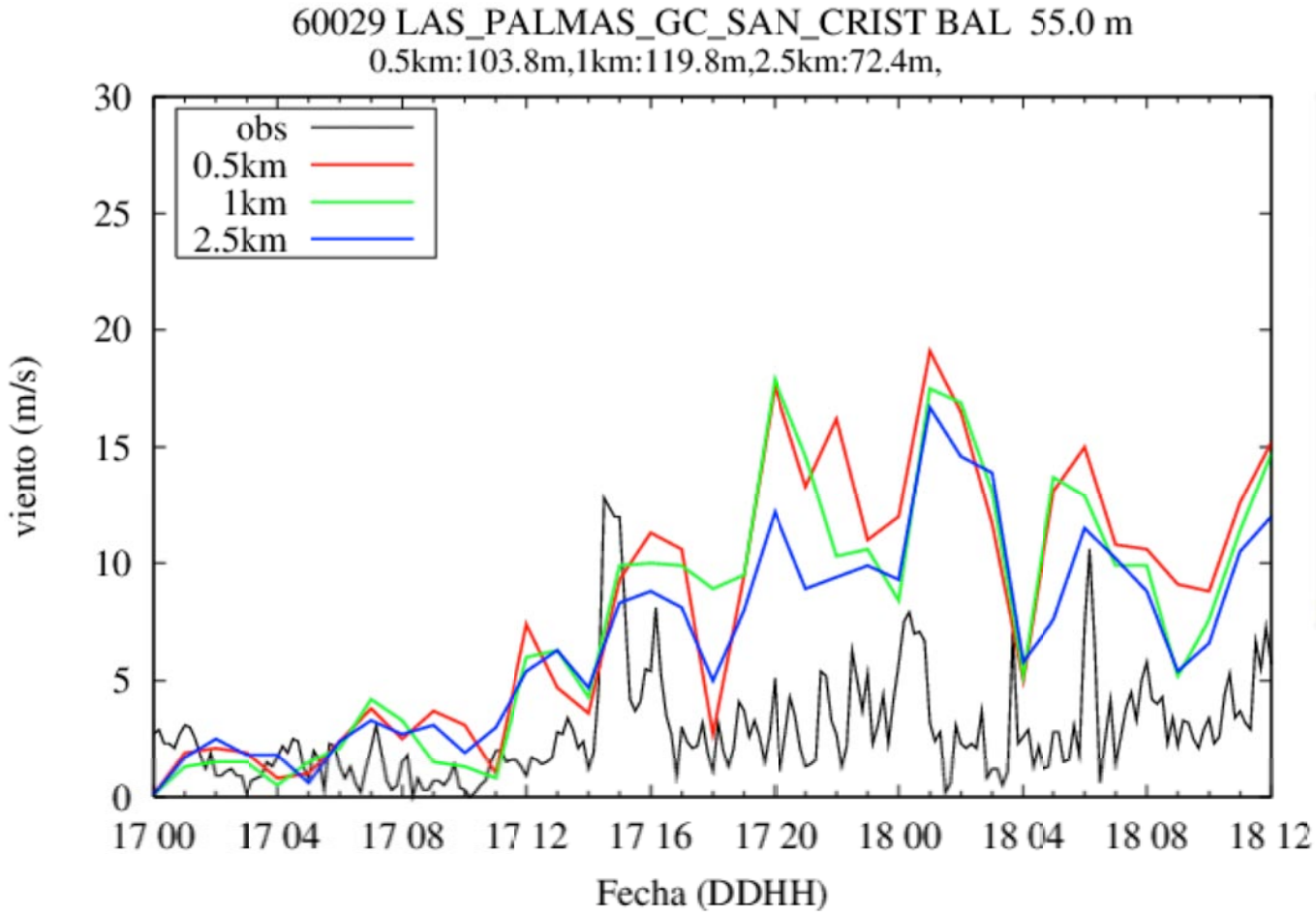
0.5 km

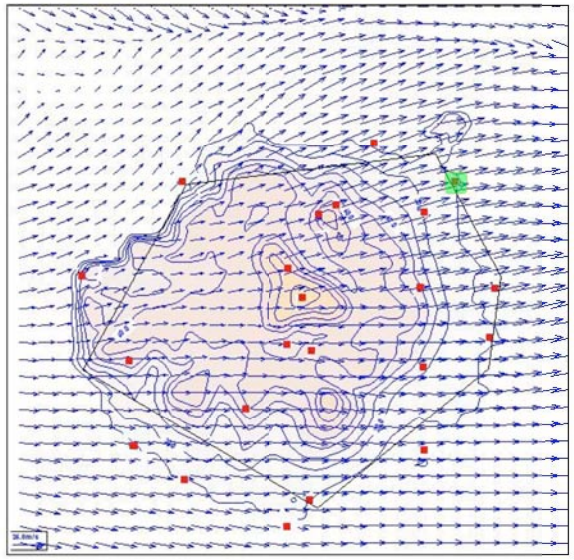






Verification: Model vs. Observation





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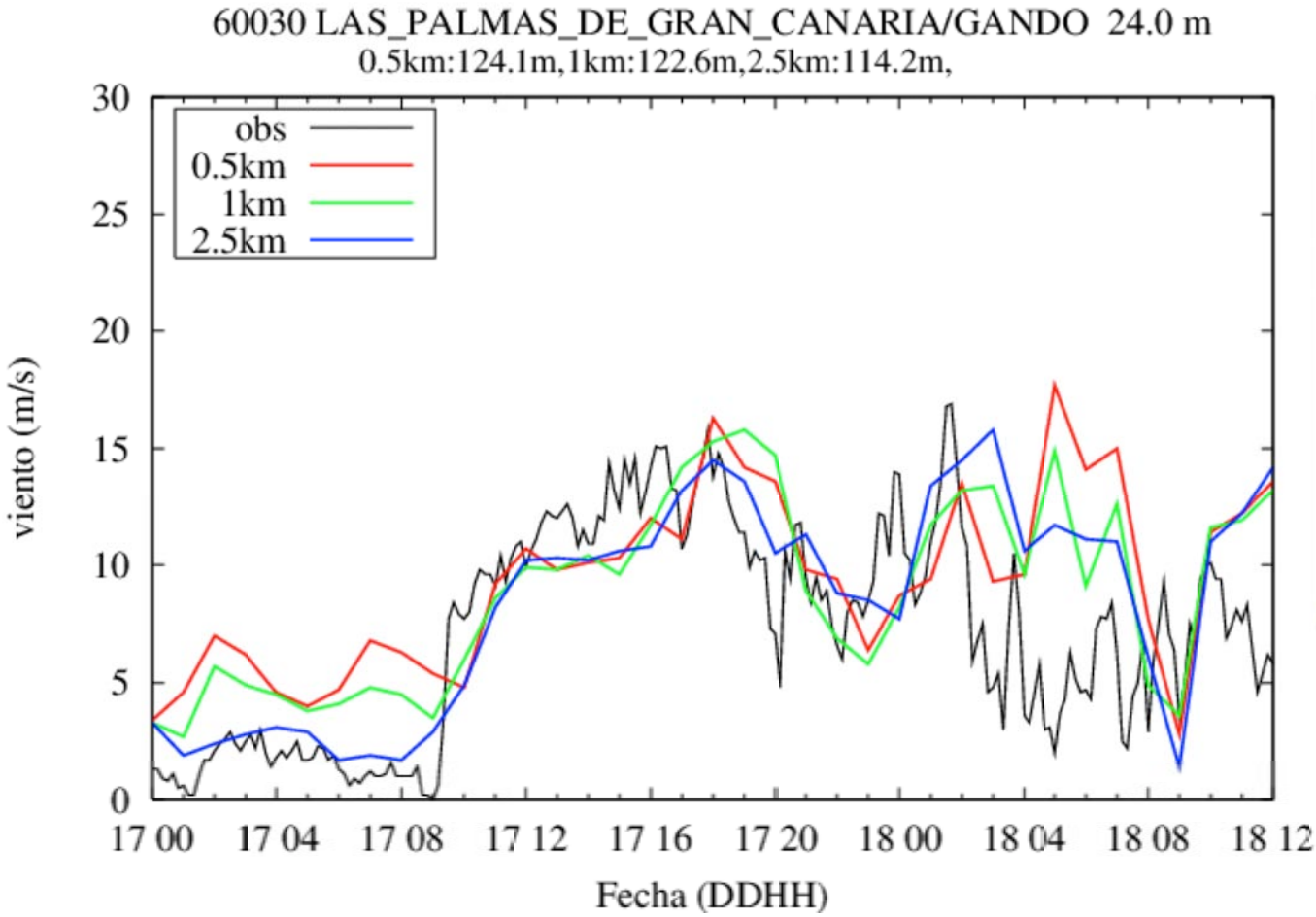

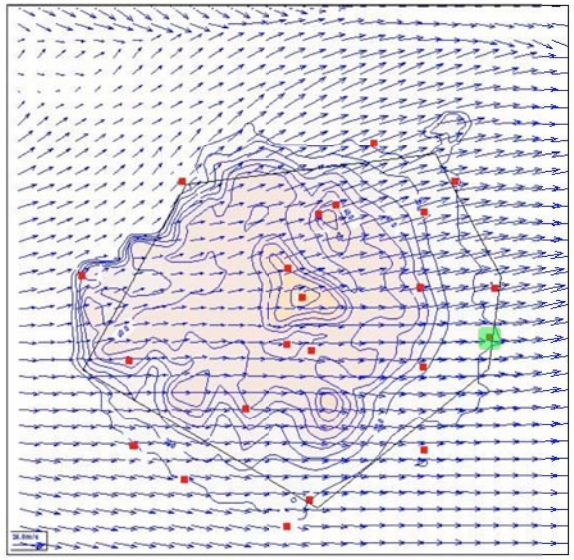

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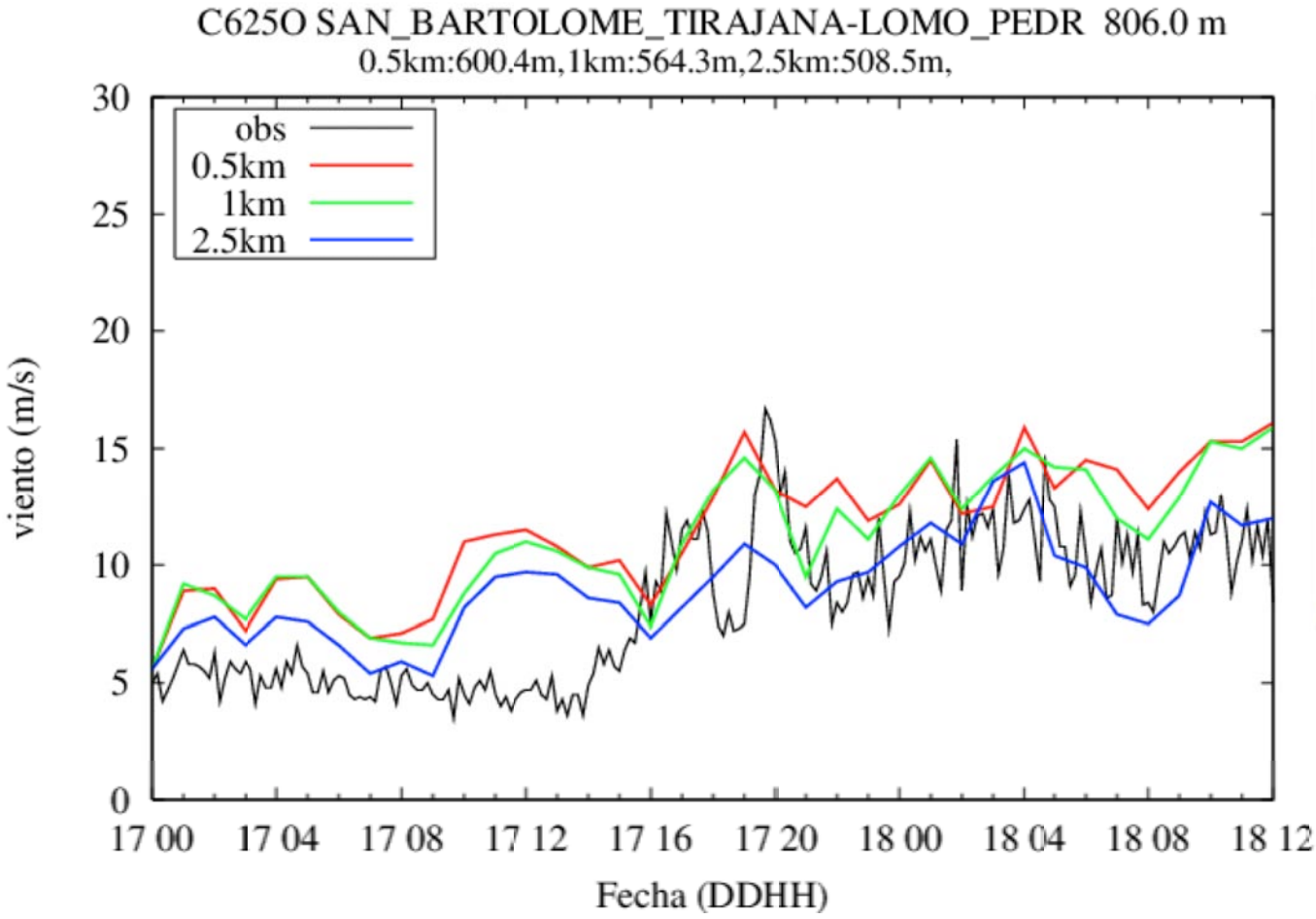

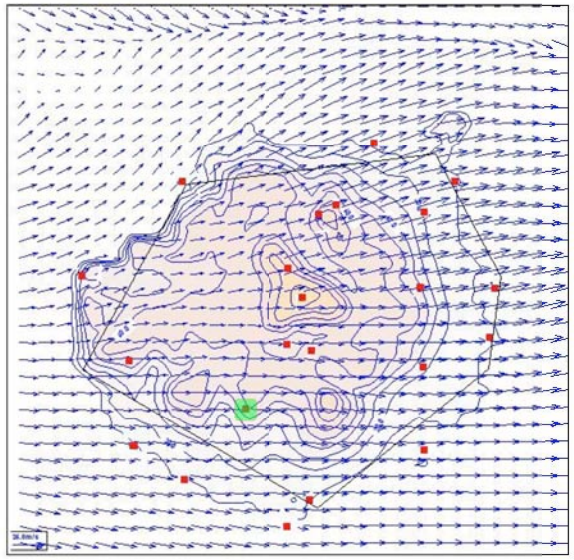

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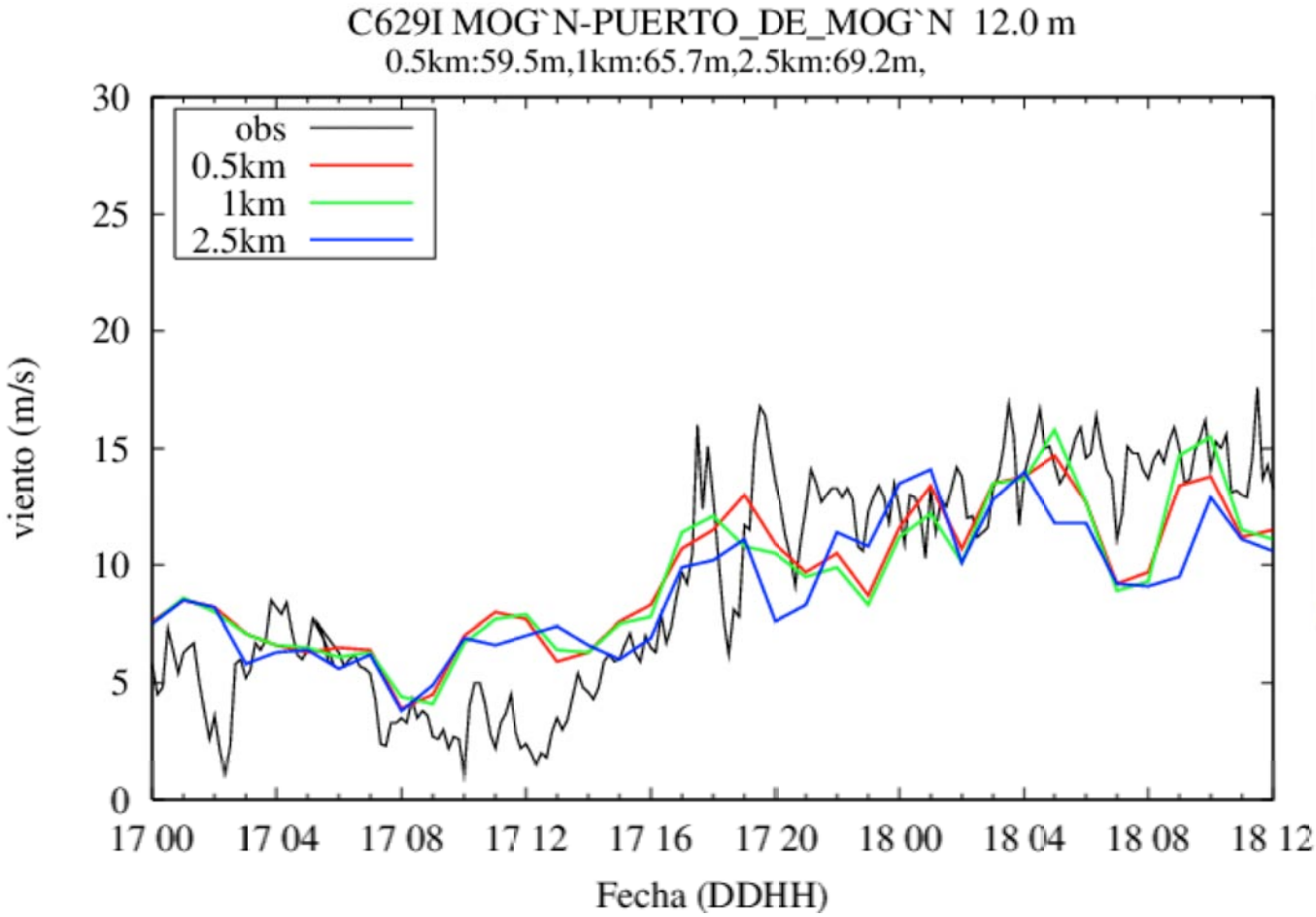

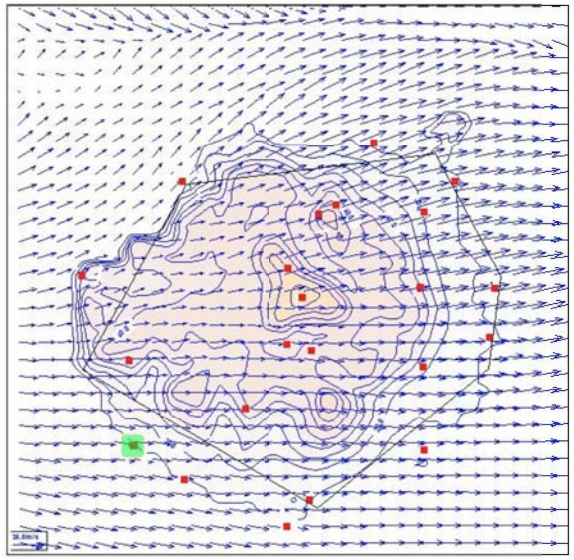

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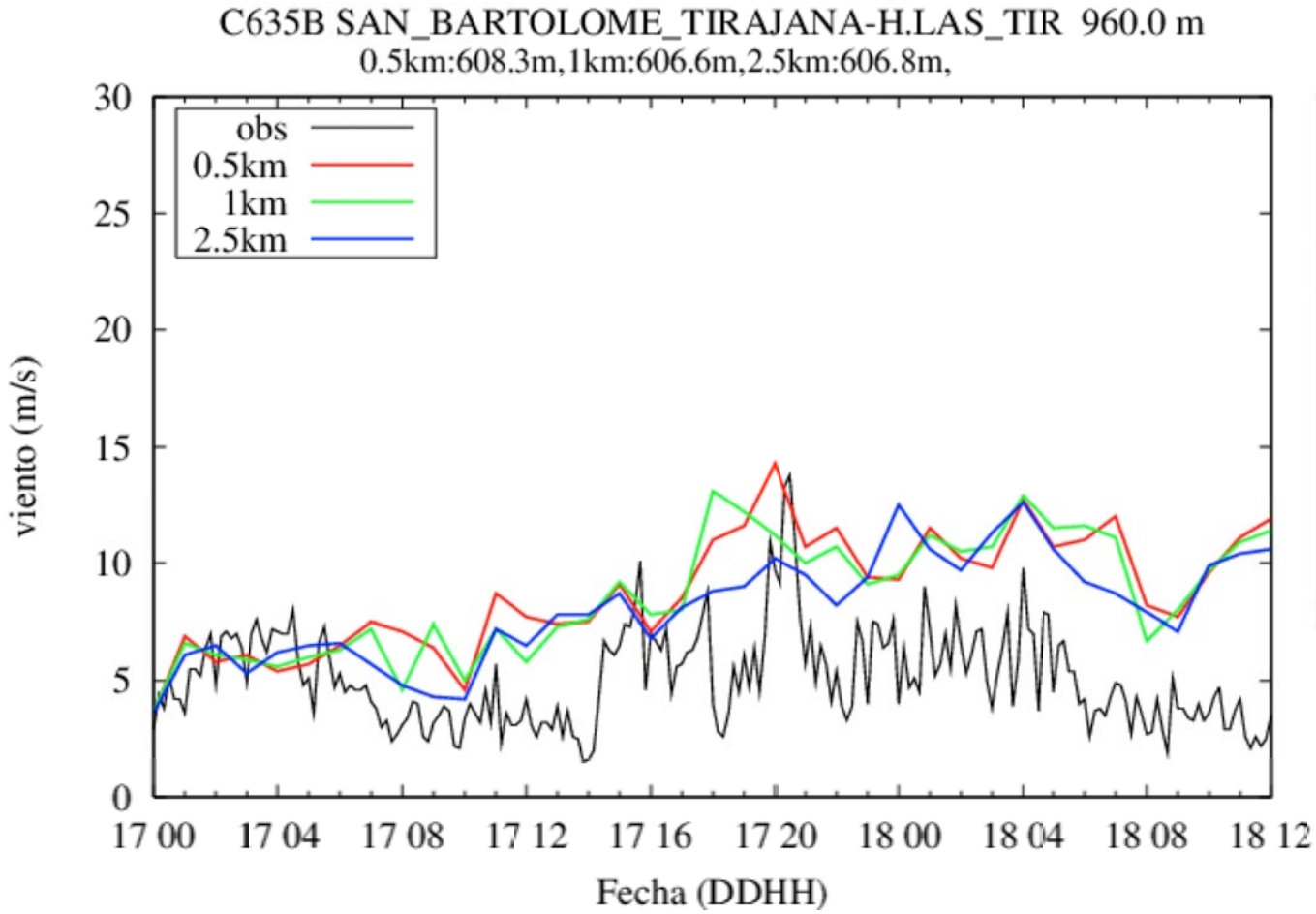

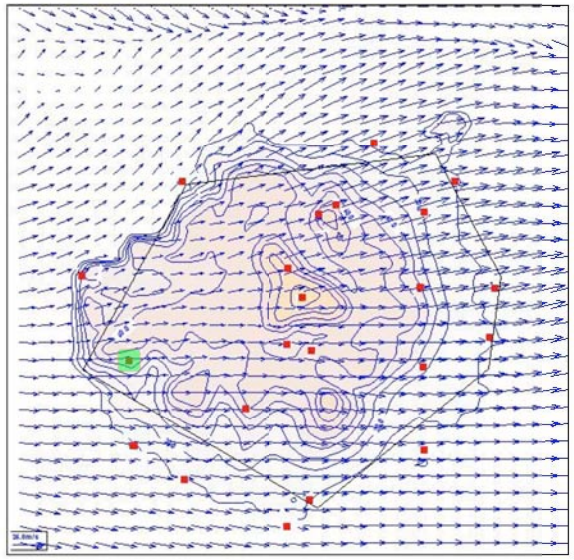

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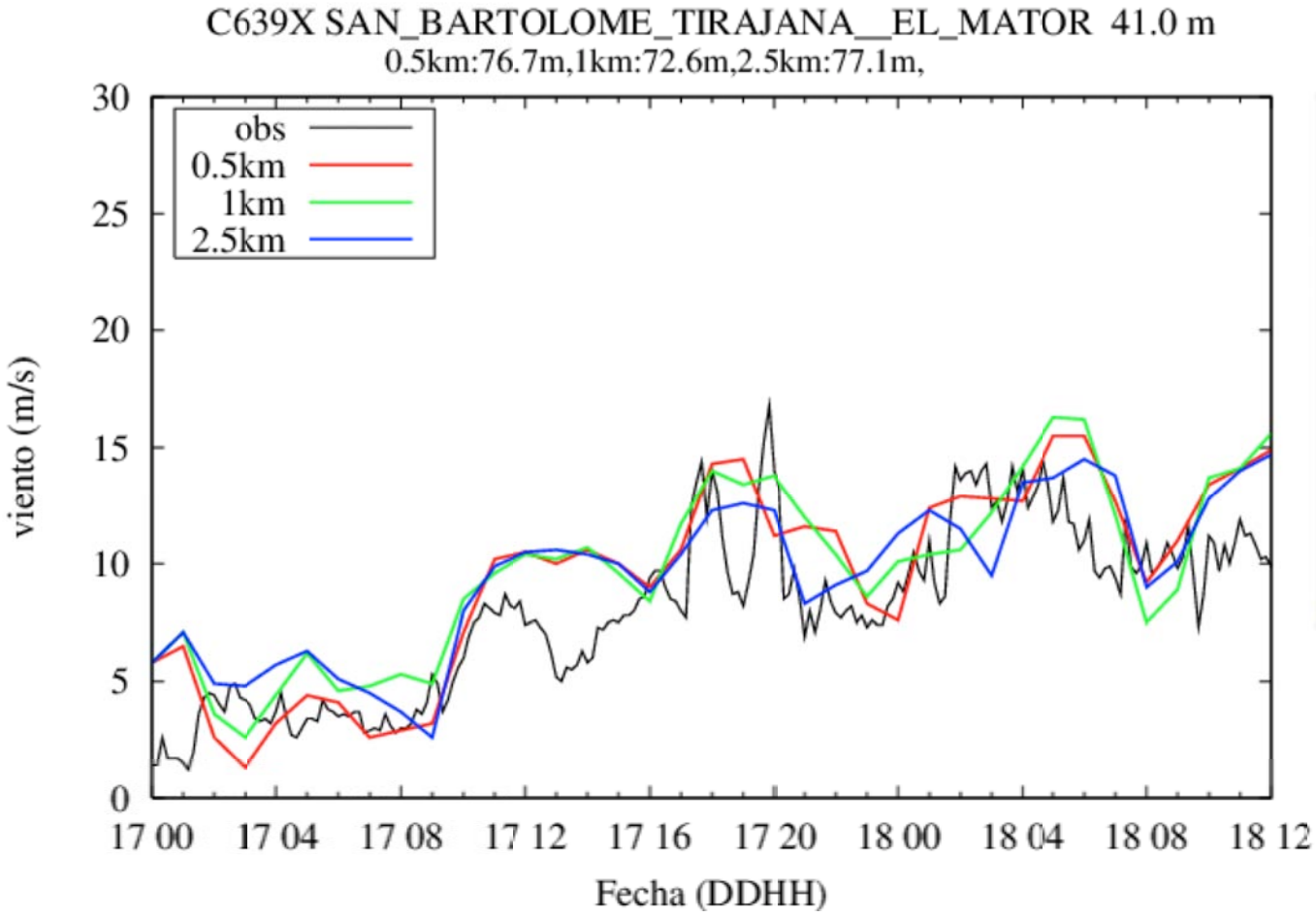

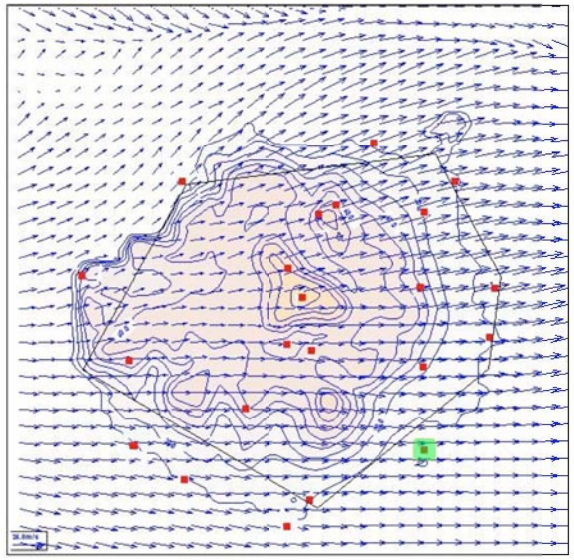

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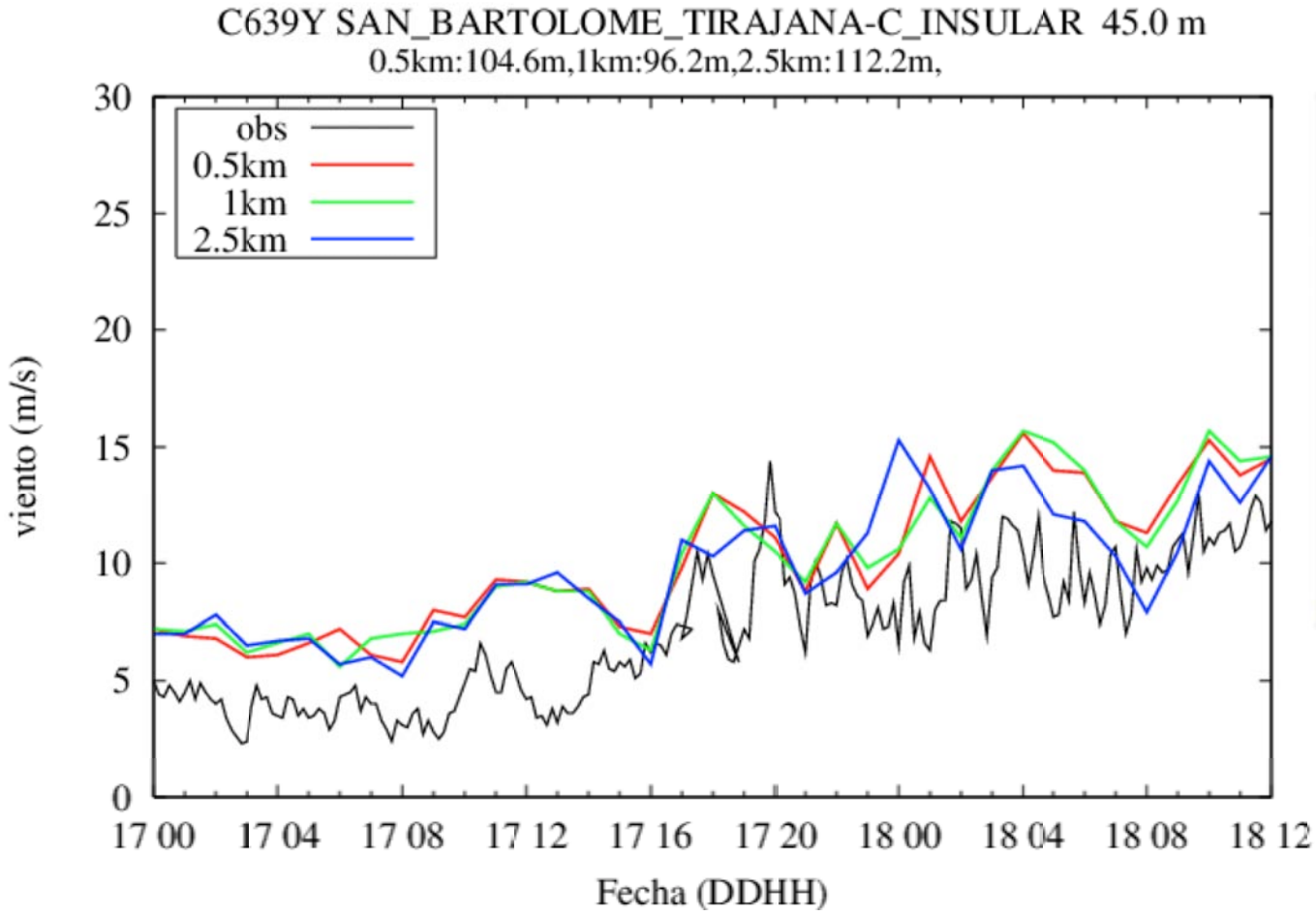

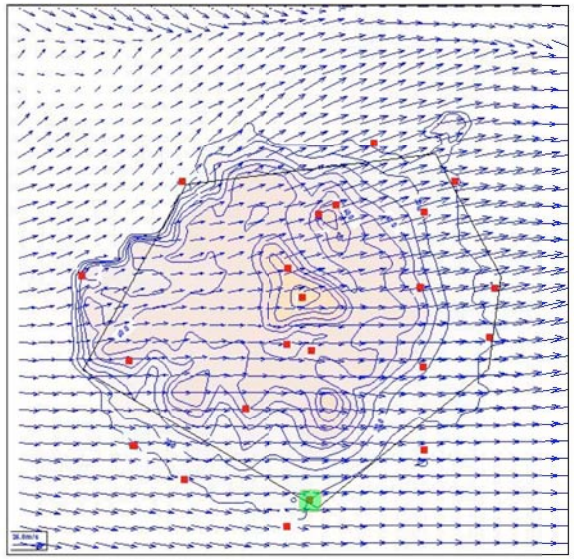

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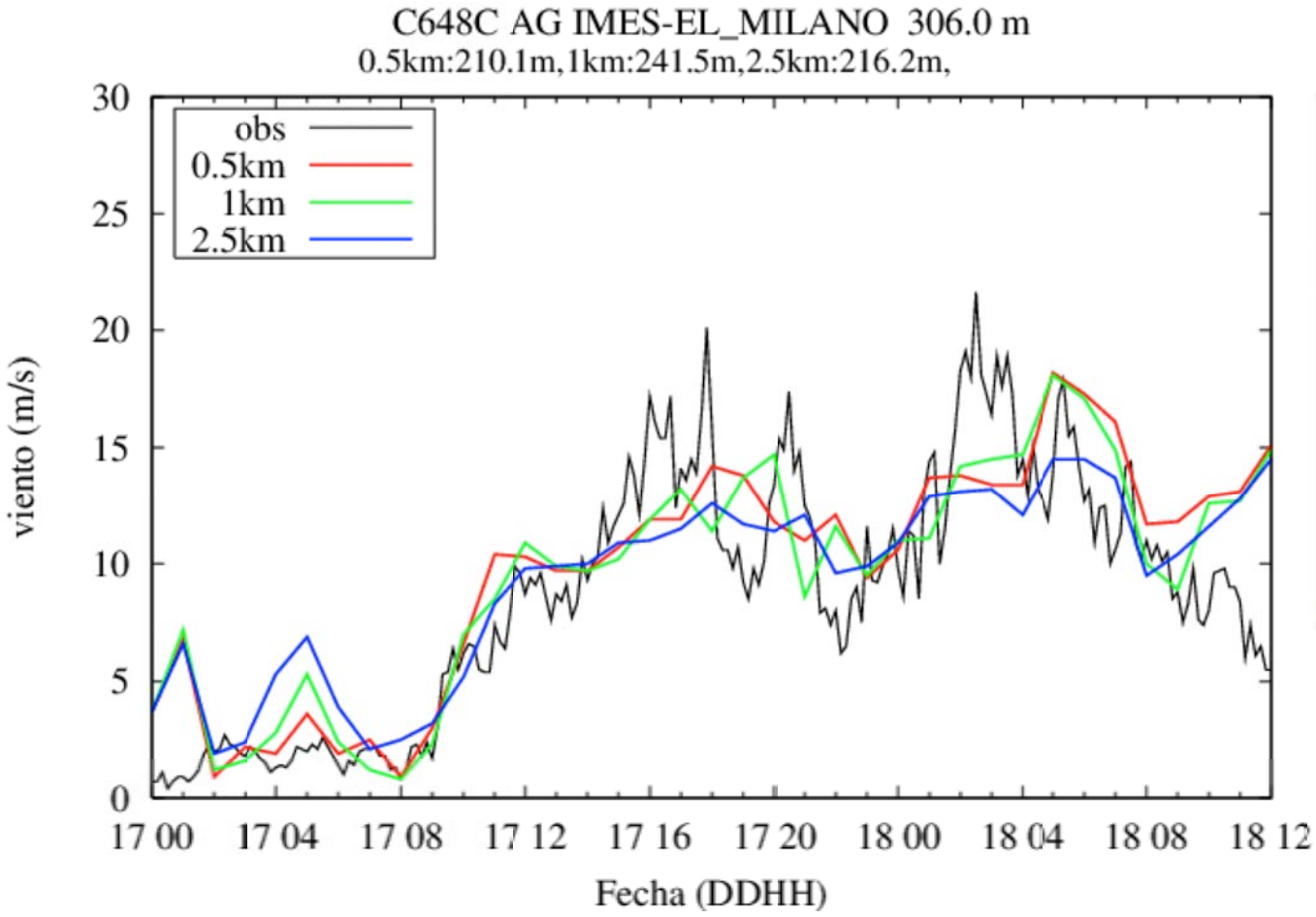

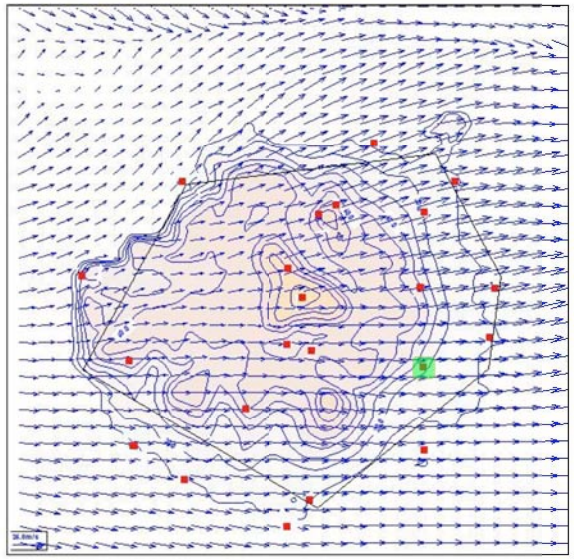

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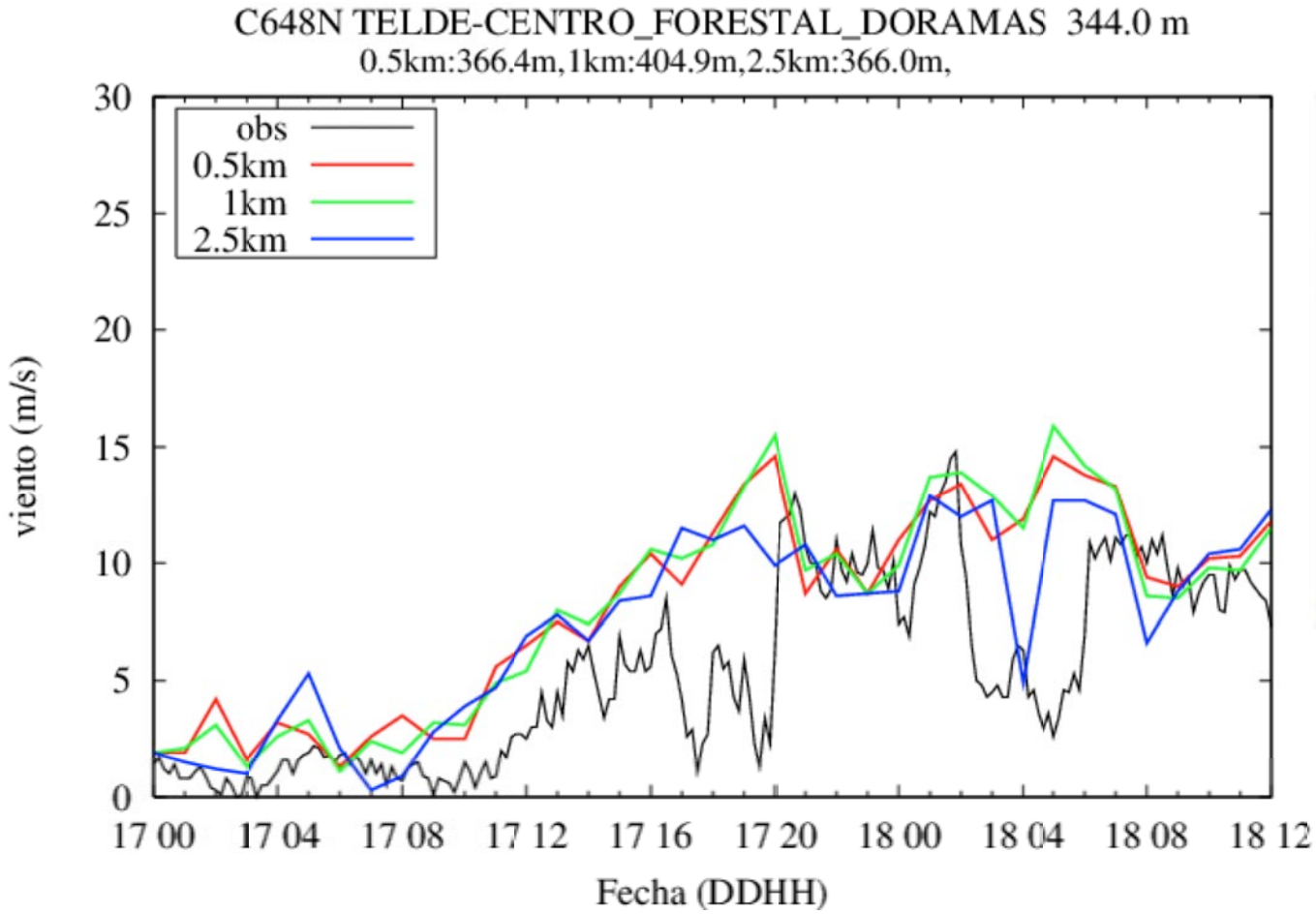

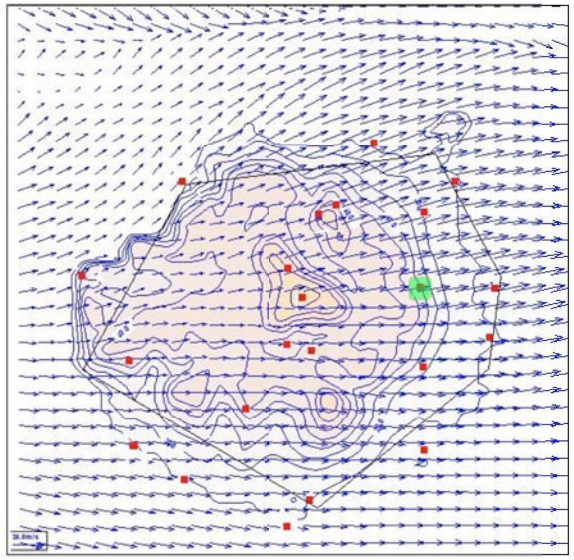

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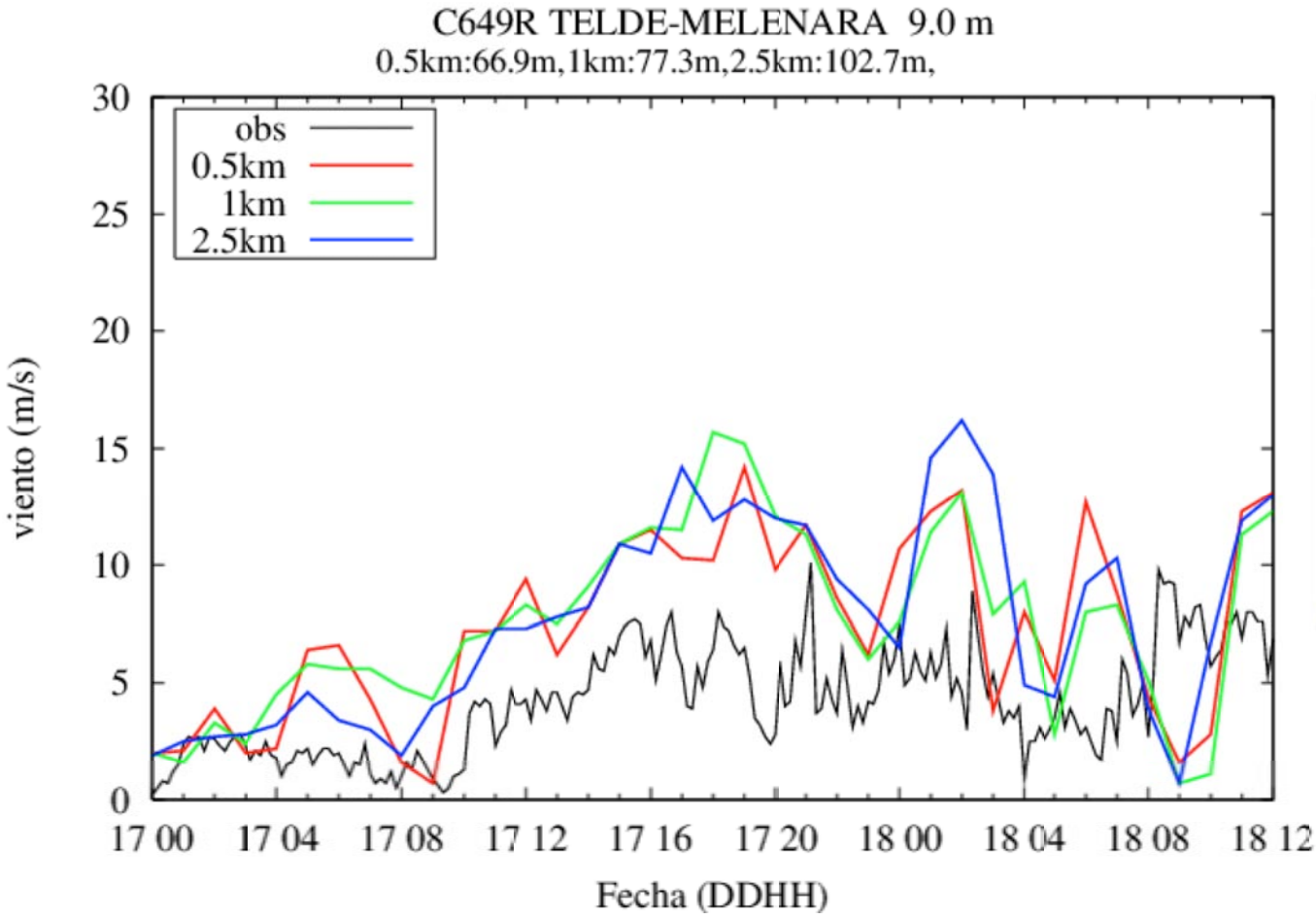

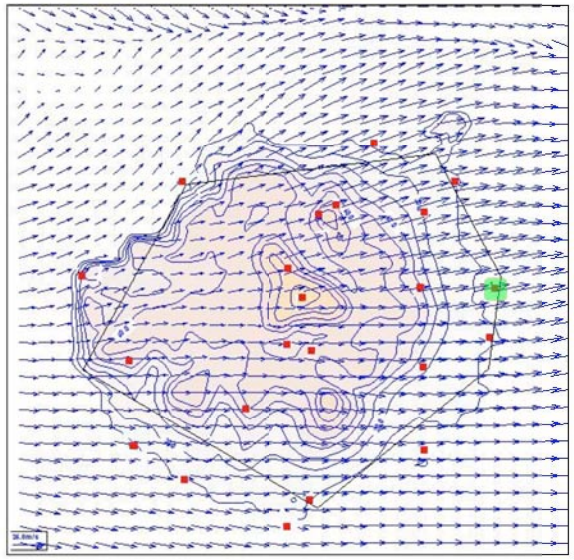

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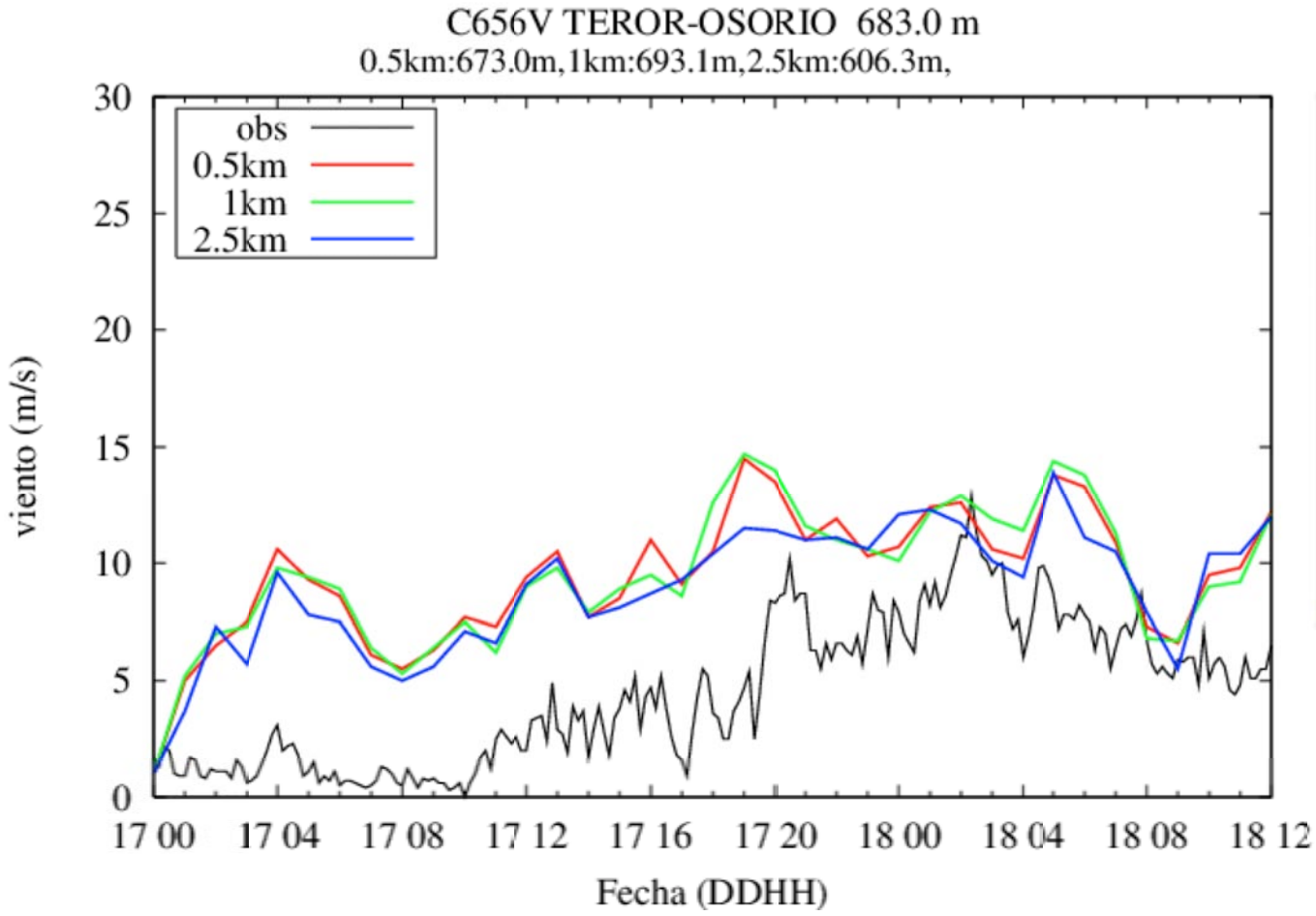

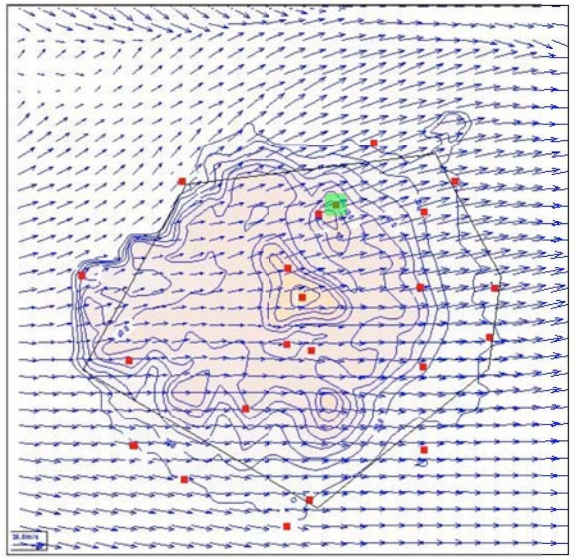

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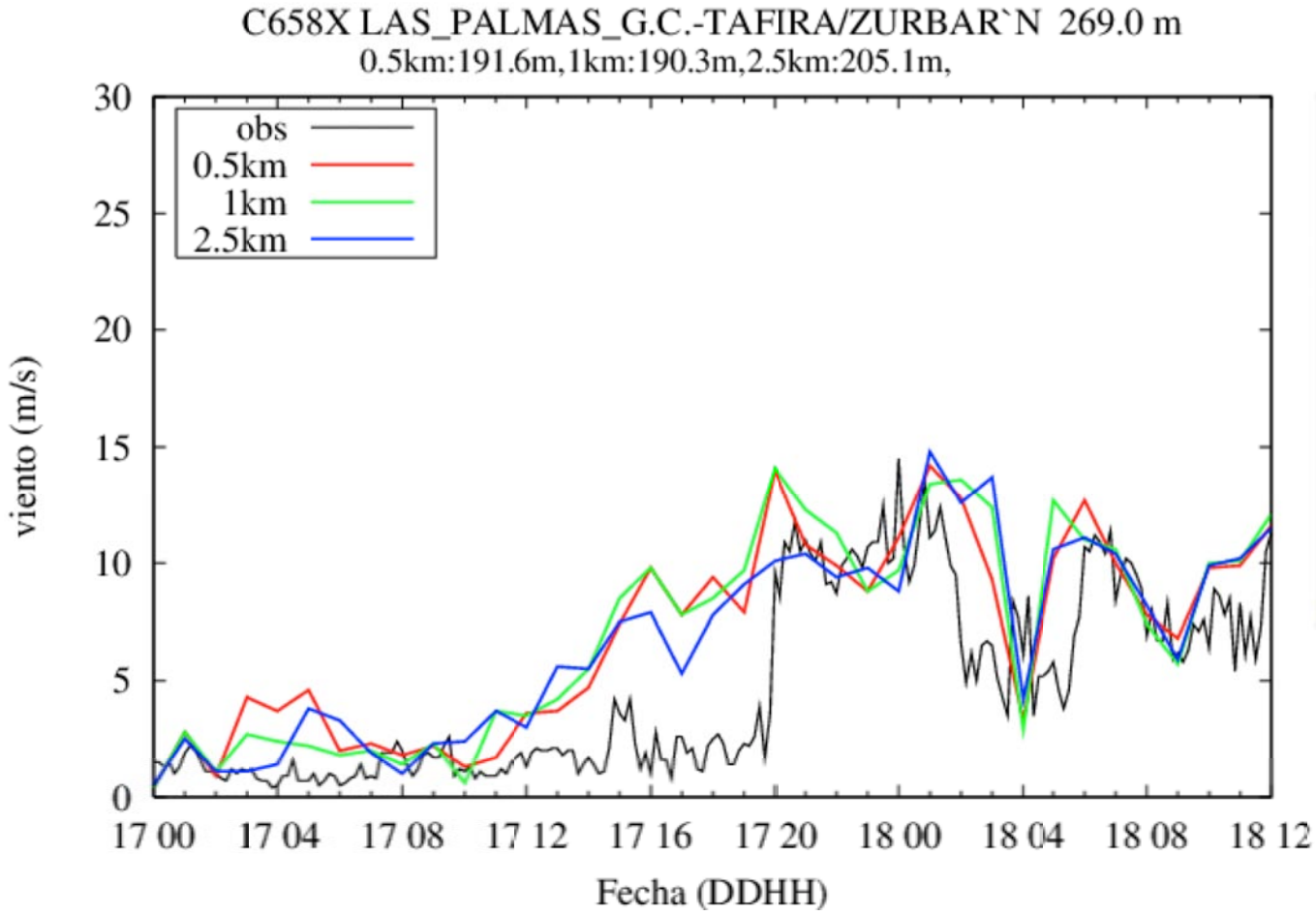

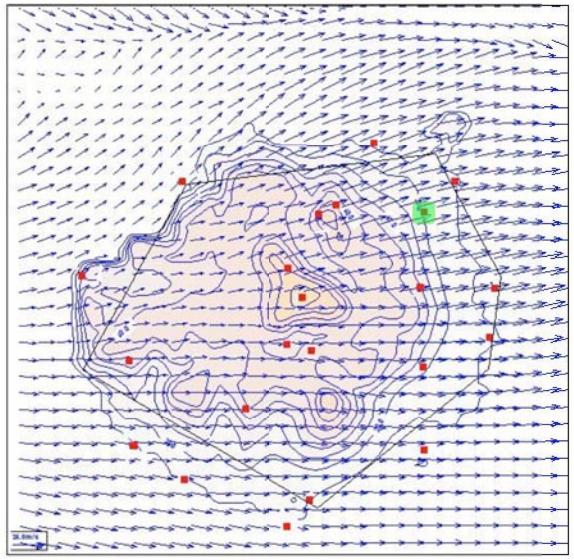

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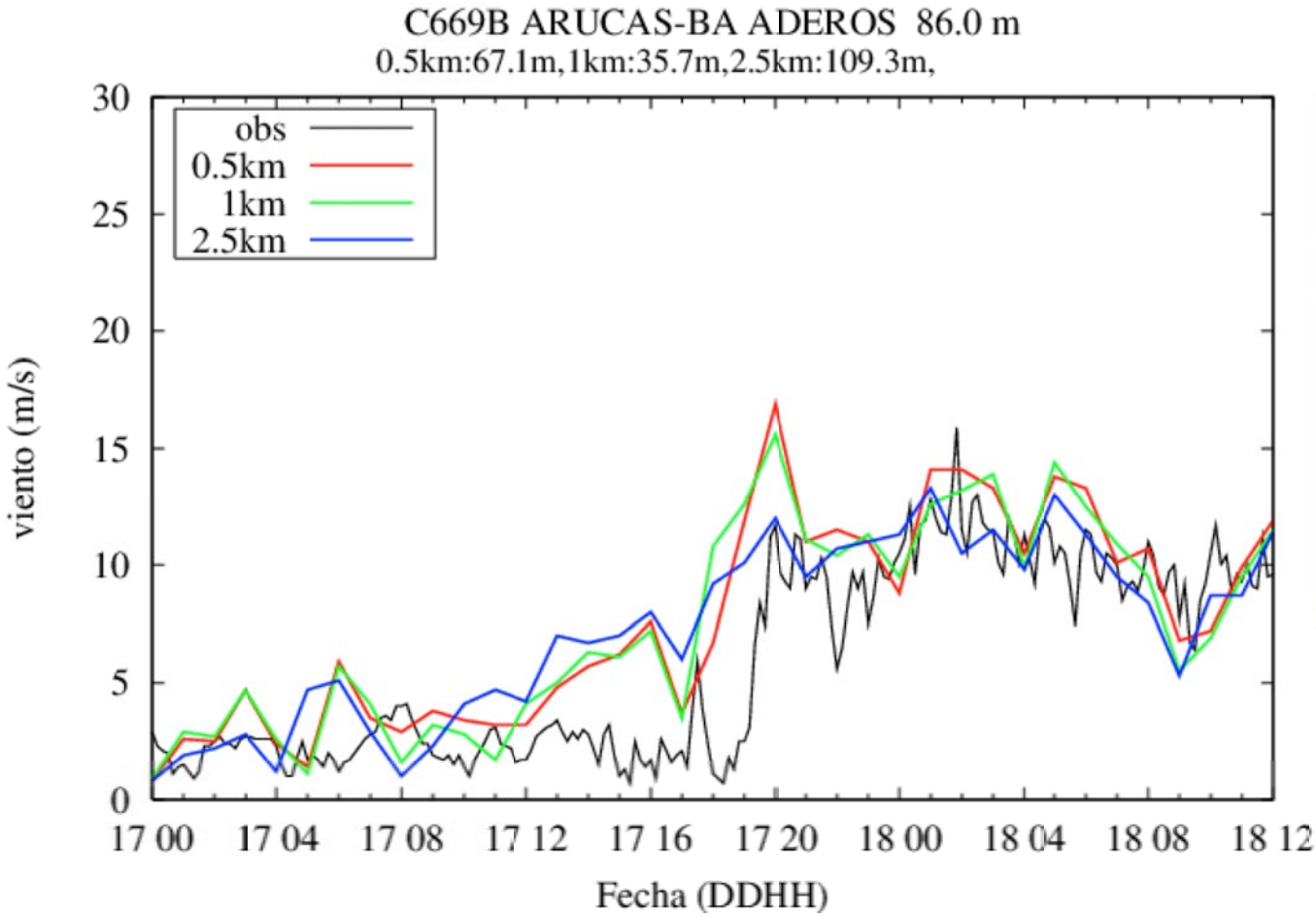
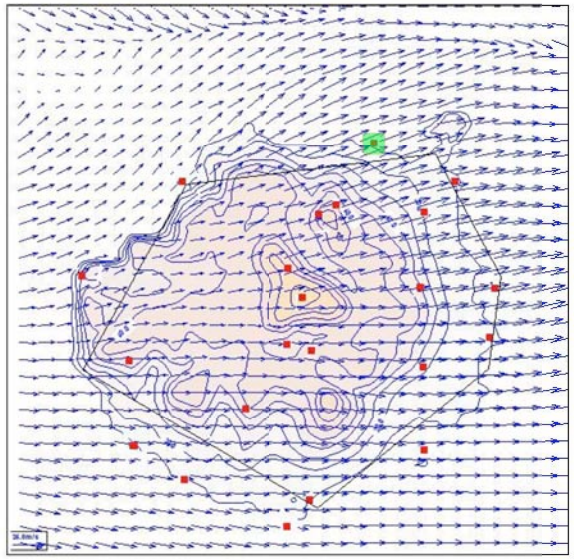
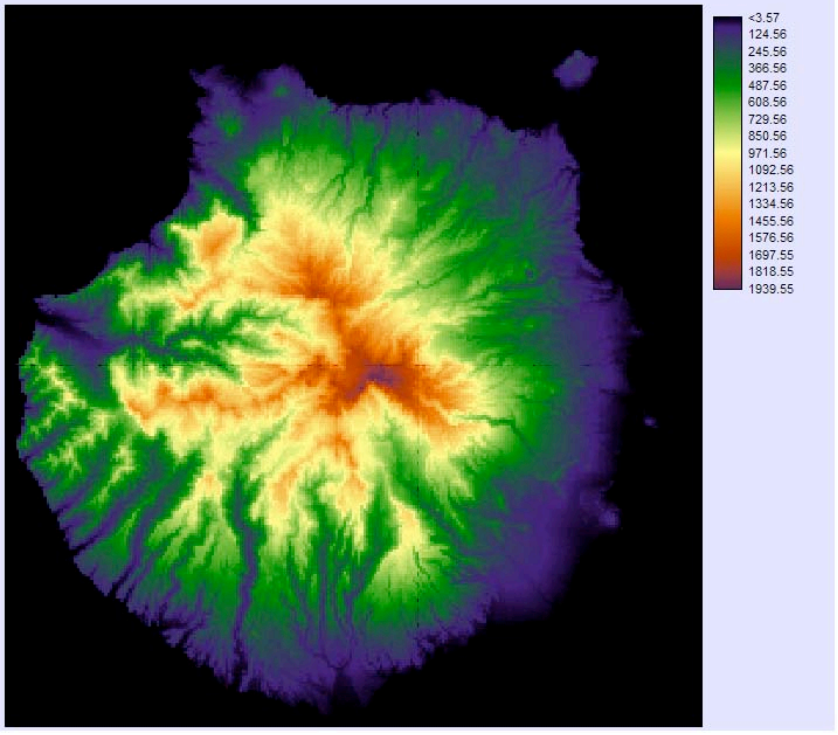




On going work

- Convert UTM-200 file (200m) to GTOPO30 format used by Harmonie